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ABSTRACT

This edition of "NAEPFacts" highlights findings from the first attempt by the National Assessment of Educational Progress (NAEP) to measure elementary students' oral reading on a large scale. This article presents data on 1,136 fourth graders' oral fluency and its relationship to 3 other aspects of reading ability: comprehension, accuracy, and rate. Results presented in the article indicate that 55% of fourth graders read at the higher fluency ratings of levels 3 and 4; and 13% met the criteria for the highest rating in their oral reading. The more fluent fourth-grade readers tended to read with greater understanding, accuracy and rate. Contains five references. (RS)

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Listening to Children Read Aloud: Oral Fluency

Fifty-five percent of fourth-graders were considered to be fluent; 13 percent met the criteria for the highest rating in their oral reading. Fluent fourth-grade readers tended to read with greater understanding, accuracy, and rate. Implications for instruction are discussed.

This edition of *NAEPfacts* highlights findings from the first attempt by the National Assessment of Educational Progress (NAEP) to measure elementary students' oral reading on a large scale. Judgments about reading ability are often made on the basis of students' oral reading fluency. Therefore, the relationship between fluency and other aspects of reading ability must be clear. This issue presents data on fourth graders' oral fluency and its relationship to three other aspects of reading ability: comprehension, accuracy, and rate. Measures of oral reading fluency were taken from a representative sample of fourth-grade students who participated in the 1992 NAEP reading assessment (Pinnell et al. 1995).

What Is Fluency?

NAEP defines fluency as the ease or "naturalness" of reading. The key elements include (a) grouping or ***phrasing*** of words as revealed through the intonation, stress, and pauses exhibited by readers; (b) adherence to author's ***syntax***; and (c) ***expressiveness*** of the oral reading—interjecting a sense of feeling, anticipation, or characterization. Table 1 describes the NAEP fluency scale. Students at levels 3 and 4 are generally considered to be fluent, and those at levels 1 and 2 non-fluent.

Table 1.—NAEP's oral reading fluency scale

Level 4	Reads primarily in larger, meaningful phrase groups. Although some regressions, repetitions, and deviations from text may be present, these do not appear to detract from the overall structure of the story. Preservation of the author's syntax is consistent. Some or most of the story is read with expressive interpretation.
Level 3	Reads primarily in three- or four-word phrase groups. Some smaller groupings may be present. However, the majority of phrasing seems appropriate and preserves the syntax of the author. Little or no expressive interpretation is present.
Level 2	Reads primarily in two-word phrases with some three- or four-word groupings. Some word-by-word reading may be present. Word groupings may seem awkward and unrelated to larger context of sentence or passage.
Level 1	Reads primarily word-by-word. Occasional two-word or three-word phrases may occur—but these are infrequent and/or they do not preserve meaningful syntax.

Source: U.S. Department of Education, National Center for Education Statistics. *Listening to Children Read Aloud*, 15. Washington, DC: 1995

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Two other aspects of oral reading measured in the NAEP assessment are ***accuracy*** and ***rate***. *Accuracy* was determined through an analysis of students' oral reading deviations from the words in the text (misread words), and *rate* was measured in terms of words-per-minute.

How Was Fluency Assessed?

A representative sample of 1,136 fourth-grade students who participated in the study were initially asked to read aloud a brief passage from *Highlights* magazine. The process served both to familiarize the students with the tape-recording process and to enable the interviewer to determine whether the student should be asked to read aloud from the more difficult assessment passage later in the interview.

Following the introductory session, students silently read a complete narrative passage titled *The Hungry Spider and the Turtle*, which they had read during the main NAEP assessment. Narrative text was chosen because the use of dialogue and narrative structure was deemed more appropriate for eliciting expressive oral reading. Students answered three comprehension questions about the passage orally and then read a portion of the passage aloud. Thus, students' oral reading of the passage took place after they had read the passage twice silently—once previously as a part of the main NAEP written assessment and once before answering the comprehension questions. Students were instructed to read the story as if they were reading to someone who had never heard it before. The oral reading was audio-taped and later analyzed for overall fluency.

The information obtained from these oral reading sessions was linked to data from the main NAEP reading assessment, including the overall reading proficiency of students participating in the study, and their reading experiences both in and out of school.

What Did We Learn?

Oral reading fluency. As shown in table 2, 55 percent of the fourth-grade students read at the higher fluency ratings of levels 3 and 4. However, only 13 percent of the students met the criteria for the highest rating, level 4, even though they had read the passage silently twice before. These students read in larger phrase groups that consistently preserved the author's syntax, and they read some or most of the story with expressive interpretation. Those students who received lower fluency ratings read primarily in one- or two-word phrases with little or no recognition of the text's sentence structure.

Table 2.—Percentage of fourth-grade students at each fluency level and their average proficiencies

Fluency level	Percentage of students	Average proficiency
4	13	249
3	42	229
2	42	207
1	7	179

Source: U.S. Department of Education, National Center for Education Statistics. *Listening to Children Read Aloud, 22. Washington, DC: 1995*

Higher levels of fluency were associated with higher average reading proficiency (table 2). For example, students who were rated as the most fluent (level 4) exhibited an average reading proficiency of 249, whereas students who were rated as least fluent (level 1) had an average proficiency score of 179. The main NAEP reading scale ranges from 0 to 500. In NAEP, reading proficiency is determined by the ability of students to provide an initial understanding of text, develop a more complete interpretation, connect knowledge from text with their own personal background knowledge, and to stand apart from the text and demonstrate a critical stance (National Assessment Governing Board, 1994).

Accuracy, rate, and fluency. The study also examined the role of accuracy and rate in the observed relationship between reading fluency and reading proficiency. *Accuracy* was defined in terms of the number of misread words (omitted, inserted, or substituted), and *rate* in terms of words per minute. As shown in table 3, students who read more fluently read the passage considerably faster (126 to 162 words per minute) than those who read less fluently (65 to 89 words per minute). These more fluent readers were, on average, somewhat more accurate (96 to 97 percent) than less fluent readers (94 percent).

Table 3.—Percent accuracy and words per minute, by fourth-graders' oral reading fluency

	Nonfluent		Fluent	
	Fluency Level 1	Fluency Level 2	Fluency Level 3	Fluency Level 4
Percent accuracy	94	94	96	97
Words per minute	65	89	126	162

SOURCE: U.S. Department of Education, National Center for Education Statistics. *Listening to Children Read Aloud*, 44. Washington, DC: 1995.

Discussion

After reading a passage twice silently, about 13 percent of the fourth-graders in the NAEP study could read with expressive interpretation and consistent preservation of the author's syntax. Higher levels of fluency were associated with higher average reading proficiency. What does all this mean for instruction?

Some researchers (Anderson, Wilkinson, & Mason 1991; Hoffman and Isaacs 1991), assuming that fluency results from good comprehension, suggest that oral reading instruction should emphasize conveying meaning rather than simply reading accurately. Others (Reutzel and Hollingsworth, 1993) claim that fluency affects comprehension as well. The results reported here do not rule out the possibility that as students are asked to pay attention to elements of fluency such as phrasing, syntax, and expressiveness (and not merely to read aloud), they will become more attentive to the meaning of the passage.

Note that the relationship between reading fluency and good comprehension may be influenced by other factors such as reading accuracy and rate. The findings indicated that more fluent readers are substantially faster than less fluent readers, covering more text without sacrificing accuracy. Such information may have diagnostic value. It may be easier to detect poor comprehension from students' slower rate than from their degree of word accuracy.

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Notes:

NAEPFacts is a new series that provides brief summaries of NAEP results on background variables that may be related to student achievement. The series is a product of the National Center for Education Statistics (NCES), **Gary W. Phillips**, Associate Commissioner for Education Assessment. This issue was written by **Sheida White**. Readers are invited to comment by contacting the author at NCES, Education Assessment Division, 555 New Jersey Avenue NW, Washington, DC 20208–5653. To order NAEP publications, call Bob Clemons at 301–763–1968 or 202–219–1690.

All differences reported are statistically significant at the .05 level with adjustments for multiple comparisons. For further information on standard errors or on estimating variance, see Pinnel et al.

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